**[Web 2.0 Is the Future of Education](http://www.stevehargadon.com/2008/03/web-20-is-future-of-education.html)**

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A moment of extreme clarity became an obsession for me last week. A session that I had prepared for the [IL-TCE conference](http://www.iceberg.org/page.php?pid=10) went from "Web 2.0 Tools for the Classroom" to "Why Web 2.0 Is Important to the Future of Education." Then, as PowerPoint fever gripped me (OpenOffice.org Impress, actually), moving slides around as though they were puzzle pieces finally coming together correctly, I found my thoughts coalescing toward a bold conclusion and a final title change: "Web 2.0 Is the Future of Education."

It was not, I know, what I was supposed to talk about. But it felt so important, as though the idea needed me to say it out loud. And it was magnified by the impression I was having that we're about to have the biggest discussion about education and learning in decades, maybe longer.

I believe that the read/write Web, or what we are calling Web 2.0, will culturally, socially, intellectually, and politically have a greater impact than the advent of the printing press. I believe that we cannot even begin to imagine the changes that are going to take place as the two-way nature of the Internet begins to flower, and that even those of us who have spent time imagining this future will be astounded by what happens. I'm going to identify ten trends in this regard that I think have particular importance for education and learning, and then discuss seven steps I think educators can take to make a difference during this time. I have been heavily influenced by an article co-authored by [John Seely Brown](http://www.johnseelybrown.com/) (JSB) in [Educause Magazine, called "Minds on Fire: Open Education, the Long Tail, and Learning 2.0"](http://www.educause.edu/ir/library/pdf/ERM0811.pdf) and listening at least twice to [a talk he'd given at MIT](http://ocw.mit.edu/OcwWeb/web/about/milestone/index.htm) on the same topic. I've tried to attribute his thoughts here, but there is a fair amount of "remix" taking place in my bold assertion, and while the conclusion is my own, his work has significantly informed it.  
 **Trend #1: A New Publishing Revolution.** The Internet is becoming a platform for unparalleled creativity, and we are creating the new content of the Web. The Web that we've known for some years now has really been a one-way medium, where we read and received as passive participants, and that required a large financial investment to create content. The new Web, or Web 2.0, is a two-way medium, based on contribution, creation, and collaboration--often requiring only access to the Web and a browser. Blogs, wikis, podcasting, video/photo-sharing, social networking, and any of the hundreds (thousands?) of software services preceded by the words "social" or "collaborative" are changing how and why content is created.

**Trend #2: A Tidal Wave of Information.** The publishing revolution will have an impact on the sheer volume of content available to us that is hard to even comprehend. If fewer than 1% of the users of [Wikipedia](http://www.wikipedia.org/) actually contribute to it, what will happen when 10% do? Or 20%? There are over 100,000 blogs created daily, and MySpace alone has something over 375,000 new users (content creators) every day. I remember how much work I had to go to in my childhood to just find information. Now, we must figure out what information to give our time and attention to when we are engulfed by it. Web 2.0 is the cause of what can only be called a flood of content--and while we don't know what the solutions will be to the information dilemma, we can be pretty sure they will be brought forth from the collaborative web itself.

I will also say that on a personal level, when people ask me the answer to content overload, I tell them (counter-intuitively) that it is to produce more content. Because it is in the act of our becoming a creator that our relationship with content changes, and we become more engaged and more capable at the same time. In a world of overwhelming content, we must swim with the current or tide (enough with water analogies!).

**Trend #3: Everything Is Becoming Participative.** [Amazon.com](http://www.amazon.com/) is for me the great example of how participation has become integral to an industry, and in a delicious irony, the book industry itself. The reviews by other readers are the most significant factor in my decision to purchase (and sometimes even read!) a book now. Not only that, but Amazon takes the information of its users and by tracking their behavior provides data from them that they are most often not even aware that they are helping to create: of all the customers who looked at a certain book, here is what they actually ended up buying. This feature often leads me to other books I might otherwise not have heard of. Amazon's [Kindle](http://www.amazon.com/Kindle-Amazons-Wireless-Reading-Device/dp/B000FI73MA), I keep saying, is a hair's breadth away from ROCKING our reading world. Imagine an electronic book that allows you to comment on a sentence, paragraph, or section of the book, and see the comments from other readers... to then actually be in an electronic dialog with those other readers. It's coming.  
 **Trend #4: The New Pro-sumers.** The word "pro-sumer" is a combination of the words "producer" and "consumer." More and more companies are engaging their customers in the creation of the product they sell them. From avid off-road bikers who created the original mountain bikes that now dominate the market, to substantial companies eliciting R&D work from a broader public. (And don't get me started on American Idol, which is a fairly brilliant way to create a superstar.) The nature not just of how knowledge is acquired, but how it is produced, is changing.  
 **Trend #5: The Age of the Collaborator.** We are most definitely in a new age, and it matters. If I'd been born 150 years ago, I might have been taken out into the wilderness and left to die--I can't digest milk, have a skin disorder that keeps me mostly out of the sun, and a nerve problem in a foot that without the right shoe insert incapacitates me. There is no question that historical eras favor certain personalities and types, and the age of the collaborator is here or coming, depending on where you sit. The era of trusted authority (Time magazine, for instance, when I was young) is giving way to an era of transparent and collaborative scholarship (Wikipedia). The expert is giving way to the collaborator, since 1 + 1 truly equals 3 in this realm.

**Trend #6: An Explosion of Innovation.** I'm pretty proud of my brother ([Andrew Hargadon](http://www.andrewhargadon.com/)), who wrote the book [How Breakthroughs Happen](http://www.techlearning.com/blog/2008/03/www.amazon.com/How-Breakthroughs-Happen-Surprising-Companies/dp/1578519047). In explaining the misconception of the lone inventor, he shows how innovation results from the application of knowledge from one field to another--including the important role that consultants can play in this process. Now, imagine all of us as creators, bringing our own particular experiences and insight to increasingly diverse and specific areas of knowledge. The combination of 1) an increased ability to work on specialized topics by gathering teams from around the globe, and 2) the diversity of those collaborators, should bring with it an incredible amount of innovation.

**Trend #7: The World Gets Even Flatter and Faster.** Yes, and even if that "flat" world is "spiky" or "wrinkled," it's still getting pretty darn flat. That anyone, anywhere in the world, can study using over the material from over 1800 open courses at MIT is astounding, and it's only the start.  
 **Trend #8: Social Learning Moves Toward Center Stage.** This is really JSB territory, and best addressed by him (see www.johnseelybrown.com), but I'll recommend him to you while still mentioning that the distinction between the "lecture" room and the "hallway" is diminishing--since it's in the hallway discussions after the lecture where JSB mentions that learning actually takes place. Just witness the amazing early uses of social media for educational technology conferences (see www.conference20.com). In the aforementioned Educause article, JSB discusses a study that showed that one of the strongest determinants of success in higher education is the ability to form or participate in study groups. In the video of his lecture he makes the point that study groups using electronic methods have almost the exact same results as physical study groups. The conclusion is somewhat stunning--electronic collaborative study technologies = success? Maybe not that simple, but the real-life conclusions here may dramatically alter how we view the structure of our educational institutions. JSB says that we move from thinking of knowledge as a "substance" that we transfer from student to teacher, to a social view of learning. Not "I think, therefore I am," but "We participate, therefore we are." From "access to information" to "access to people" (I find this stunning). From "learning about" to "learning to be." His discussions of the "apprenticeship" model of learning and how it's naturally being manifested on the front lines of the Internet (Open Source Software) are not to be missed.

It's the model of students as contributors that really grabs me, and leads to the next trend.

**Trend #9: The Long Tail.** When Amazon.com sells more items that aren't carried in retail stores than are, it's pretty apparent that an era of specialized production is made possible by the Internet. [Chris Anderson's Wired Magazine article](http://www.wired.com/wired/archive/12.10/tail_pr.html), and then [his book](http://www.techlearning.com/blog/2008/03/www.amazon.com/Long-Tail-Future-Business-Selling/dp/1401302378), should capture the attention of the educational world as the technologies of the Web make "differentiated instruction" a reality that both parents and students will demand. I can go online and watch heart-surgery take place live. I can find a tutor in almost any subject who can work with me via video-conference and shared desktop. If a student cares about something--if they have a passion for something--they can learn about it and they can actually produce work in the field and become a contributing part of that community.

**Trend #10: Social Networking Really (Opens Up the Party.** Web 2.0 was amazing when blogs and wikis led the way to user-created content, but as the statistics I've quoted above show, the party really began when sites that combined several Web 2.0 tools together created the phenomenon of "social networking." (Lets face it, blogging is just not that easy to start doing... and wikis can intimidate even the bravest of souls.) If MySpace were a country, it would be the third most populous in the world. I think what [Ning](http://www.ning.com/) is doing by allowing users to create their own social networks is amazing--and apart from the keynote session I attended at IL-TCE, every other session presenter I heard mentioned Ning in some way. The potential for education is astounding. (Full disclosure: I consult for Ning by representing Ning to educators and educators to Ning.)

OK, so if you're still with me, before I discuss the seven things that educators can do, I want to do a little ode to JSB that shows the shifts and where I think we're going in a larger context. I also want to suggest that their implications for education and learning are paradigm-shattering, as they in fact are all really about education and learning.

\* From consuming to producing  
\* From authority to transparency  
\* From the expert to the facilitator  
\* From the lecture to the hallway  
\* From "access to information" to "access to people"  
\* From "learning about" to "learning to be"  
\* From passive to passionate learning  
\* From presentation to participation  
\* From publication to conversation  
\* From formal schooling to lifelong learning  
\* From supply-push to demand-pull

I wonder if you will agree with me, now, that Web 2.0 is the future of education. If not, I sure hope you'll sound off! In the meantime, here are some things I think educators can do if there is truth to what I have suggested.

\* **Learn About Web 2.0.** It's not going to go away, and it is pretty amazing. I know it may seem overwhelming, but it's worth taking the time to jump in somewhere and start the process. Classroom 2.0 ([www.Classroom20.com](http://www.classroom20.com/)) is not a bad place to start, since it's a social network for educators who are interested in learning about Web 2.0, as it turns out... :) Those of you with suggestions of other resources, please post comments linking to them. I do like social networking as an easy way to enter the world of Web 2.0, and a good list of educational social networks can be found at http://socialnetworksined.wikispaces.com.

\* **Lurk.** There is nothing wrong with "lurking," and a lot to recommend it. If you go to Classroom 2.0 or some other site, that doesn't mean you have to become a contributor right away. If you've spent years evaluating students on their writing, it can be a little scary to put up something you have written for the whole world to see--especially if you don't have hours and hours to refine it. So wait and watch a little.

\* **Participate**. After some purposeful lurking, consider becoming personally engaged. Be brave. Post a comment, or reply to a thought. It can be short! While Web 2.0 may seem short on grammar, spelling, and punctuation, your skills in those areas will help you to communicate well, and you will discover that contributing and creating take on significant meaning when you are participating in a worthwhile discussion.

\* **Digest This Thought:** The Answer to Information Overload Is to Produce More Information.

\* **Teach Content Production.** When you have understood the previous suggestion, you'll realize the importance of starting to teach content production to your students (and your friends, family, and anyone who will listen!). This is important on many levels, not the least of which is teaching how to make decisions about sharing what you produce (copyright issues, and be sure to learn about [Creative Commons licensing](http://www.creativecommons.org/))--so that your students can appreciate the importance of respecting the licensing rights of others.

\* **Make Education a Public Discussion**. I had a friend who use to tell me that when he said he was a teacher, all dinner conversation would stop. Maybe the general public hasn't spent much time discussing or debating education and learning lately, but it's about time for that to change.

\* **Help Build the New Playbook**. You may think that you don't have anything to teach the generation of students who seem so tech-savvy, but they really, really need you. For centuries we have had to teach students how to seek out information – now we have to teach them how to sort from an overabundance of information. We've spent the last ten years teaching students how to protect themselves from inappropriate content – now we have to teach them to create appropriate content. They may be "digital natives," but their knowledge is surface level, and they desperately need training in real thinking skills. More than any other generation, they live lives that are largely separated from the adults around them, talking and texting on cell phones, and connecting online. We may be afraid to enter that world, but enter it we must, for they often swim in uncharted waters without the benefit of adult guidance. To do so we may need to change our conceptions of teaching, and better now than later.